Please cancel claims 39, 41-44, 47, 49-73 and 75-80, amend claims 1, 37, 38 and 123, and add new claims 124-127 as follows:

1. (CURRENTLY AMENDED) A computer implemented method for generating filter coefficients to configure a filter, the method comprising:

    (a)   receiving a plurality of input signals;

    (b)   processing the received input signals to form a system of N linear equations in N unknown variables;

    (c)   storing an estimate value for each unknown variable in a processor;

    (d)   initialising, in the processor, each estimate value to a predetermined value, and establishing, in the processor, a respective auxiliary value for each estimate value;

    (e)   for each estimate value:

            (i) determining, in the processor, whether a respective predetermined condition is satisfied, the predetermined condition involving the respective auxiliary value; and

            (ii) updating, in the processor, the estimate if and only if the respective predetermined condition is satisfied, said updating comprising adding a predetermined scalar value d to the estimate value or subtracting a predetermined scalar value d from the estimate value;

    (f)   repeating step (e) a plurality of times; ~~and~~

    (g)   outputting said estimate values from the processor to provide an estimate of a solution to said system of linear equations, said solution to said system of linear equations providing said filter coefficients; and

    (h)   configuring said filter using said provided filter coefficients, said filter being arranged to process a received signal to generate a filtered signal based upon said filter coefficients.

2. (CANCELLED)

3. (PREVIOUSLY PRESENTED) A method according to claim 1, wherein said scalar value d is updated in a predetermined manner.

4. (ORIGINAL) A method according to claim 3, wherein said scalar value d is updated when and only when step (c) updates no estimate values.

5. (ORIGINAL) A method according to claim 4, wherein said updating divides d by a scalar update value.

6. (ORIGINAL) A method according to claim 5, wherein the scalar update value is equal to a power of two.

7. (ORIGINAL) A method according to claim 6, wherein the scalar update value is equal to two.

8. (ORIGINAL) A method according to claim 1, wherein each of said estimate values is initialised to be equal to zero.

9. (ORIGINAL) A method according to claim 1, wherein the respective predetermined condition for each respective estimate value does not involve the respective estimate value.

10. (CANCELLED)

11. (PREVIOUSLY PRESENTED) A method according to claim 1, wherein said auxiliary values form an auxiliary vector $\mathbf{Q}$.

12. (CANCELLED)

13. (PREVIOUSLY PRESENTED) A method according to claim 11, wherein a plurality of auxiliary values are associated with each estimate value.

14. (ORIGINAL) A method according to claim 13, wherein the predetermined condition for a respective estimate value involves the minimum amongst the plurality auxiliary values.

15. (ORIGINAL) A method according to claim 14, wherein the minimum value is compared with a threshold value.

16. (ORIGINAL) A method according to claim 15, wherein the condition is satisfied if the minimum value is less than the threshold value.

17. (ORIGINAL) A method according to claim 16, wherein the plurality of auxiliary values for a respective estimate value consist of a first auxiliary value, and second auxiliary value which is the negative of the first auxiliary value.

18. (ORIGINAL) A method according to claim 17, wherein the threshold value for the nth unknown variable is the scalar value d multiplied by the coefficient of the nth unknown variable in the nth equation.

19. (ORIGINAL) A method according to claim 18, wherein one of a plurality of updates is selected in the condition is satisfied.

20. (ORIGINAL) A method according to claim 19, wherein the scalar value d is added to the respective estimate value if the condition is satisfied and minimum value is the first auxiliary value.

21. (ORIGINAL) A method according to claim 19, wherein the scalar value d is subtracted from the respective estimate value if the condition is satisfied and minimum value is the second auxiliary value.

22. (ORIGINAL) A method according to claim 20, wherein the first auxiliary value for the mth unknown variable is initially set to be equal to the negative of the right hand side of the mth equation.

23. (ORIGINAL) A method according to claim 21, wherein the first auxiliary value for the mth unknown variable is initially set to be equal to the negative of the right hand side of the mth equation.

24. (ORIGINAL) A method according to claim 19, wherein the respective first and second auxiliary values are updated if the condition is satisfied.

25. (ORIGINAL) A method according to claim 24, wherein the first and second auxiliary values associated with each estimate value are updated if the condition is satisfied.

26. (ORIGINAL) A method according to claim 25, wherein if the predetermined condition is satisfied for the mth estimate value:
the first auxiliary value for the mth estimate value is updated by:

     multiplying the coefficient of the mth unknown variable in the nth equation by the scalar value d; and

     adding the result of said multiplication to the first auxiliary value to create a new first estimate auxiliary value, or subtracting the result of said multiplication from the first auxiliary value to create the new first estimate auxiliary value; and

the second auxiliary value for the mth estimate value is updated to be equal to the negative of the new first auxiliary value.

27. (ORIGINAL) A method according to claim 1, wherein each estimate value is represented as a fixed point binary word.

28. (ORIGINAL) A method according to claim 1, wherein each estimate value is a floating point binary word.

29. (ORIGINAL) A method according to claim 1, wherein each estimate value is a complex number.

30. (PREVIOUSLY PRESENTED) A method according to claim 1, wherein the scalar value d is updated such that the algorithm updates the estimate values in a bitwise manner, beginning with the most significant bit.

31. (ORIGINAL) A method according to claim 4, wherein step (d) is carried out until a predetermined condition is satisfied.

32. (ORIGINAL) A method according to claim 31, wherein said predetermined condition is a maximum number of iterations without an update to the scalar value d.

33. (ORIGINAL) A method according to claim 32, wherein said predetermined condition is a total execution time elapsed without an update to the scalar value d.

34. (ORIGINAL) A method according to claim 1, wherein the accurate solution of the equations is known to lie between upper and lower bounds, and the algorithm seeks a solution between said upper and lower bounds.

35. (ORIGINAL) A method according to claim 34, wherein said estimate values are initialised to a value which is within said upper and lower bounds.

36. (ORIGINAL) A method according to claim 35, wherein said estimate values are initialised to a value positioned at the midpoint of said upper and lower bounds.

37. (CURRENTLY AMENDED) A computer apparatus for ~~solving a system of~~ generating filter coefficients to configure a filter, the apparatus comprising:

a program memory containing processor readable instructions; and

-6-

a processor for reading and executing the instructions contained in the program memory;

wherein said processor readable instructions comprise instructions controlling the processor to:

(a)   receive a plurality of input signals;

(b)   process the received input signals to form a system of N linear equations in N unknown variables;

(c)   store an estimate value for each unknown variable;

(d)   initialise each estimate value to a predetermined value;

(e)   for each estimate value:

      (i) determine whether a respective predetermined condition is satisfied; and

      (ii) update the estimate if and only if the respective predetermined condition is satisfied, said updating comprising adding a predetermined scalar value d to the estimate value or subtracting a predetermined scalar value d from the estimate value;

(f)   repeat step (e) a plurality of times; ~~and~~

(g)   output~~ting~~ said estimate values from the processor to provide an estimate of a solution to said system of linear equations, said solution to said system of linear equations providing said filter coefficients; and

(h)   configure said filter using said provided filter coefficients, said filter being arranged to process a received signal to generate a filtered signal based upon said filter coefficients.

38. (CURRENTLY AMENDED) A tangible program memory for carrying computer readable program code to cause a computer to execute procedure comprising:

(a)   receiving a plurality of input signals;

(b)   processing the received input signals to form a system of N linear equations in N unknown variables;

(c)   storing an estimate value for each unknown variable in a processor;

(d)   initialising, in the processor, each estimate value to a predetermined value, and establishing, in the processor, a respective auxiliary value for each estimate value;

(e)   for each estimate value:

(i) determining, in the processor, whether a respective predetermined condition is satisfied, the predetermined condition involving the respective auxiliary value; and

(ii) updating, in the processor, the estimate if and only if the respective predetermined condition is satisfied, said updating comprising adding a predetermined scalar value d to the estimate value or subtracting a predetermined scalar value d from the estimate value;

(f)   repeating step (e) a plurality of times; ~~and~~

(g)   outputting said estimate values from the processor to provide an estimate of a solution to said system of linear equations, said solution to said system of linear equations providing ~~said~~ filter coefficients: and

(h)   configuring a filter using said provided filter coefficients, said filter being arranged to process a received signal to generate a filtered signal based upon said filter coefficients.

39-122. (CANCELLED)

123. (CURRENTLY AMENDED) A computer implemented method for ~~solving a system of N linear equations in N unknown variables~~ generating filter coefficients ~~for use in an echo cancellation apparatus~~ to configure a filter, the method comprising:

(a)   receiving a plurality of input signals;

(b)   processing the received input signals to form the a system of N linear equations in N unknown variables;

(c)   storing an estimate value for each unknown variable in a processor;

(d)   initialising, in the processor, each estimate value to a predetermined value, and establishing, in the processor, a respective auxiliary value for each estimate value;

(e)   for each estimate value:

(i) determining, in the processor, whether ~~a~~ one of a first and second respective predetermined condition is satisfied, each of the first and second predetermined conditions involving the respective auxiliary value and a scalar value d; and

(ii) updating, in the processor, the estimate if and only if ~~the~~ one of the first and second respective predetermined conditions is satisfied, said updating comprising adding a

-8-

predetermined scalar value *d* to the estimate ~~or~~ value if said first respective predetermined condition is satisfied and subtracting a predetermined scalar value *d* from the estimate value if said second respective predetermined condition is satisfied;

(f)   repeating step (e) a plurality of times; ~~and~~

(g)   outputting said estimate values from the processor to provide an estimate of a solution to said system of linear equations, said solution to said system of linear equations providing said filter coefficients ~~for an application in which it is necessary to solve said system of linear equations use in an echo cancellation apparatus~~ and;

(h)   configuring said filter using said provided filter coefficients, said filter being arranged to process a received signal to generate a filtered signal based upon said filter coefficients.

124.   (NEW)   An apparatus for filtering a signal in accordance with filter coefficients comprising:

a filter; and

a filter coefficient setting circuit, wherein the filter coefficient setting circuit is configured to:

(a)   receive signals from a first device and a second device;

(b)   process the received signals to form a system of N linear equations in N unknown variables;

(c)   store an estimate value for each unknown variable in a processor;

(d)   initialise, in the processor, each estimate value to a predetermined value, and establish, in the processor, a respective auxiliary value for each estimate value;

(e)   for each estimate value:

(i) determine, in the processor, whether a respective predetermined condition is satisfied, the predetermined condition involving the respective auxiliary value; and

(ii) update, in the processor, the estimate if and only if the respective predetermined condition is satisfied, said updating comprising adding a predetermined scalar value *d* to the estimate value or subtracting a predetermined scalar value d from the estimate value;

(f)   repeat step (e) a plurality of times; and

-9-

output said estimate values to said filter to provide said filter with filter coefficients, said filter being arranged to process a received signal to generate a filtered signal based upon said filter coefficients.

125.   (NEW)   An apparatus according to claim 124, wherein processing the received signals to form a system of N linear equations in N unknown variables comprises auto-correlating one of the received signals and cross-correlating the signals received from the first device to the second device.

126.   (NEW) An echo cancellation apparatus comprising:

a loud speaker;

a microphone;

a filter for receiving and filtering a signal; and

a filter coefficient setting circuit, wherein the filter coefficient setting circuit is configured to:

(c)   receive signals from said loud speaker and said microphone;

(d)   process the received signals to form a system of N linear equations in N unknown variables;

(c)   store an estimate value for each unknown variable;

(d)   initialise, in the processor, each estimate value to a predetermined value, and establish, in the processor, a respective auxiliary value for each estimate value;

(e)   for each estimate value:

(i) determine, in the processor, whether a respective predetermined condition is satisfied, the predetermined condition involving the respective auxiliary value; and

(ii) update, in the processor, the estimate if and only if the respective predetermined condition is satisfied, said updating comprising adding a predetermined scalar value d to the estimate value or subtracting a predetermined scalar value d from the estimate value;

(f)   repeat step (e) a plurality of times; and

-10-

(g)   output said estimate values to said filter to provide said filter with filter coefficients for cancelling an echo from said loud speaker in said microphone, said filter being arranged to process a received signal to generate a filtered signal based upon said filter coefficients.

127.   (NEW)   An apparatus according to claim 126, wherein processing the received signals to form a system of N linear equations in N unknown variables comprises auto-correlating one of the received signals and cross-correlating the signals received from the loud speaker and microphone.